

WHAT IS CLAIMED IS:

1. A waste disposal apparatus comprising:
a first combustion chamber for incinerating
waste material in an oxygen rich atmosphere to produce
ash and exhaust;
a second combustion chamber for firing said
exhaust in an oxygen starved atmosphere; and
a liquid filter for capturing particulate
matter contained in said fired exhaust and for chemically
treating said exhaust to reduce the quantity of CO, NO
and SO contained in said fired exhaust.
2. The apparatus of Claim 1 further comprising an
injector for blowing waste material into said first
combustion chamber.
3. The apparatus of Claim 2 wherein said injector
blows said waste material into said first combustion
chamber along a trajectory that suspends said waste
material for a time sufficient to enhance incineration of
said waste material.
4. The apparatus of Claim 1 wherein said first
combustion chamber further comprises means for agitating
said waste material and said ash in said first combustion
chamber.
5. The apparatus of Claim 1 wherein said exhaust
is retained in said second combustion chamber for at
least one second.
6. The apparatus of Claim 5 further comprising
means for controlling the direction of exhaust flowing
through said second combustion chamber.

7. The apparatus of Claim 1 further comprising a cooling chamber for mixing outside air with said fired exhaust discharged from said second combustion chamber.

5 8. The apparatus of Claim 7 further comprising an electrostatic filter for removing particles from said fired exhaust.

10 9. The apparatus of Claim 7 further comprising a reducing catalyst for treating said exhaust to neutralize or remove by-products of combustion contained in said fired exhaust.

15 10. The apparatus of Claim 7 further comprising an oxidizing catalyst for converting CO contained in said fired exhaust to CO₂.

20 11. The apparatus of Claim 1 wherein said liquid filter comprises water and either urea or ammonia.

12. The apparatus of Claim 1 wherein said liquid filter comprises a thickening or jelling agent for increasing the viscosity of said liquid.

25 13. The apparatus of Claim 1 wherein said liquid filter includes means for agitating said liquid and for mixing said fired exhaust with said liquid.

30 14. The apparatus of Claim 1 further comprising means for cooling said filtered exhaust flowing from said liquid filter.

15. A method for disposing of waste material
comprising:

incinerating said waste material in an oxygen rich atmosphere to produce ash and exhaust;

firing said exhaust in an oxygen starved atmosphere to produce a fired exhaust; and

5 filtering said fired exhaust in a neutralizing solution to remove particles contained in said fired exhaust and for chemically treating said fired exhaust to reduce harmful gasses.

10 16. The method of Claim 15 wherein said harmful gasses comprise one of the following: CO, NO, SO₂ or HCL.

15 17. The method of Claim 15 further comprising the step of agitating said waste material and ash during said incinerating step to increase incineration.

18. The method of Claim 15 further comprising the step of cooling said fired exhaust.

20 19. The method of Claim 15 further comprising the step of filtering said fired exhaust to remove particles.

25 20. The method of Claim 15 further comprising the step of treating said fired exhaust to remove by-products of combustion contained in said fired exhaust.

30 21. The method of Claim 15 further comprising the steps of agitating said neutralizing solution and mixing said fired exhaust with said neutralizing solution during said filtering step.

35 22. A waste disposal system comprising:
means for reducing said waste material and for feeding said reduced waste material to said first combustion means;

Sub D7

a first combustion means for incinerating said reduced waste material in an oxygen rich atmosphere to produce an exhaust;

5 a second combustion means for firing said exhaust in an oxygen starved atmosphere;

means for removing particles from said fired exhaust;

10 first means for treating said fired exhaust to remove oxides of nitrogen;

second means for treating said fired exhaust to accelerate oxidizing reactions in said fired exhaust; and

15 liquid means for capturing particulate matter contained in said fired exhaust and for chemically treating said fired exhaust to reduce CO, NO, HCL and SO₂ contained in said fired exhaust.

16 22. The waste disposal system of claim 22 wherein each of said means further comprises means for sensing each of said functions.

20 17 23. The waste disposal system of claim 23 wherein each of said sensing means is connected to a means for monitoring and controlling each of said functions.

25 18 25. The apparatus of Claim 1 further comprising a means for mixing said captured particulate matter in said liquid filter to produce a foam or froth.

30 26. A waste transport apparatus for use in a waste disposal apparatus having a shredder, said waste transport apparatus comprising an injector for blowing waste material away from said shredder along a trajectory that deposits said waste for further processing.

31/